



cag agt ggc cat ctt gtt tgt agc aac tgt cgc cca aag ctc aca tgt Gln Ser Gly His Leu Val Cys Ser Asn Cys Arg Pro Lys Leu Thr Cys	75	80	85	534
tgt cca act tgc cgg ggc cct ttg gga tcc att cgc aac ttg gct atg Cys Pro Thr Cys Arg Gly Pro Leu Gly Ser Ile Arg Asn Leu Ala Met	90	95	100	582
gag aaa gtg gct aat tca gta ctt ttc ccc tgt aaa tat gcg tct tct Glu Lys Val Ala Asn Ser Val Leu Phe Pro Cys Lys Tyr Ala Ser Ser	105	110	115	630
gga tgt gaa ata act ctg cca cac aca gaa aaa gca gac cat gaa gag Gly Cys Glu Ile Thr Leu Pro His Thr Glu Lys Ala Asp His Glu Glu	120	125	130	678
ctc tgt gag ttt agg cct tat tcc tgt ccg tgc cct ggt gct tcc tgt Leu Cys Glu Phe Arg Pro Tyr Ser Cys Pro Cys Pro Gly Ala Ser Cys	140	145	150	726
aaa tgg caa ggc tct ctg gat gct gta atg ccc cat ctg atg cat cag Lys Trp Gln Gly Ser Leu Asp Ala Val Met Pro His Leu Met His Gln	155	160	165	774
cat aag tcc att aca acc cta cag gga gag gat ata gtt ttt ctt gct His Lys Ser Ile Thr Thr Leu Gln Gly Glu Asp Ile Val Phe Leu Ala	170	175	180	822
aca gac att aat ctt cct ggt gct gtt gac tgg gtg atg atg cag tcc Thr Asp Ile Asn Leu Pro Gly Ala Val Asp Trp Val Met Met Gln Ser	185	190	195	870
tgt ttt ggc ttt cac ttc atg tta gtc tta gag aaa cag gaa aaa tac Cys Phe Gly Phe His Phe Met Leu Val Leu Glu Lys Gln Glu Lys Tyr	200	205	210	918
gat ggt cac cag cag ttc ttc gca atc gta cag ctg ata gga aca cgc Asp Gly His Gln Gln Phe Phe Ala Ile Val Gln Leu Ile Gly Thr Arg	220	225	230	966
aag caa gct gaa aat ttt gct tac cga ctt gag cta aat ggt cat agg Lys Gln Ala Glu Asn Phe Ala Tyr Arg Leu Glu Leu Asn Gly His Arg	235	240	245	1014
cga cga ttg act tgg gaa gcg act cct cga tct att cat gaa gga att Arg Arg Leu Thr Trp Glu Ala Thr Pro Arg Ser Ile His Glu Gly Ile	250	255	260	1062
gca aca gcc att atg aat agc gac tgt cta gtc ttt gac acc agc att Ala Thr Ala Ile Met Asn Ser Asp Cys Leu Val Phe Asp Thr Ser Ile	265	270	275	1110
gca cag ctt ttt gca gaa aat ggc aat tta ggc atc aat gta act att				1158

Ala Gln Leu Phe Ala Glu Asn Gly Asn Leu Gly Ile Asn Val Thr Ile  
280 285 290 295

tcc atg tgt tgaaatggca atcaaacatt ttctggccag tggtaaaaac 1207  
Ser Met Cys

ttcagttca cagaaaataa ggcacccatc tgtctgccaa cctaaaactc tttcggtagg 1267  
tggaaagc 1274

<210> 2  
<211> 298  
<212> PRT  
<213> Homo sapien

<400> 2  
Met Val Ile Ile Ile Phe Leu Leu Pro Pro Tyr Val Phe Ile Ser Glu  
1 5 10 15  
Met Ser Arg Gln Thr Ala Thr Ala Leu Pro Thr Gly Thr Ser Lys Cys  
20 25 30  
Pro Pro Ser Gln Arg Val Pro Ala Leu Thr Gly Thr Thr Ala Ser Asn  
35 40 45  
Asn Asp Leu Ala Ser Leu Phe Glu Cys Pro Val Cys Phe Asp Tyr Val  
50 55 60  
Leu Pro Pro Ile Leu Gln Cys Gln Ser Gly His Leu Val Cys Ser Asn  
65 70 75 80  
Cys Arg Pro Lys Leu Thr Cys Cys Pro Thr Cys Arg Gly Pro Leu Gly  
85 90 95  
Ser Ile Arg Asn Leu Ala Met Glu Lys Val Ala Asn Ser Val Leu Phe  
100 105 110  
Pro Cys Lys Tyr Ala Ser Ser Gly Cys Glu Ile Thr Leu Pro His Thr  
115 120 125  
Glu Lys Ala Asp His Glu Glu Leu Cys Glu Phe Arg Pro Tyr Ser Cys  
130 135 140  
Pro Cys Pro Gly Ala Ser Cys Lys Trp Gln Gly Ser Leu Asp Ala Val  
145 150 155 160  
Met Pro His Leu Met His Gln His Lys Ser Ile Thr Thr Leu Gln Gly  
165 170 175  
Glu Asp Ile Val Phe Leu Ala Thr Asp Ile Asn Leu Pro Gly Ala Val  
180 185 190  
Asp Trp Val Met Met Gln Ser Cys Phe Gly Phe His Phe Met Leu Val  
195 200 205  
Leu Glu Lys Gln Glu Lys Tyr Asp Gly His Gln Gln Phe Phe Ala Ile  
210 215 220  
Val Gln Leu Ile Gly Thr Arg Lys Gln Ala Glu Asn Phe Ala Tyr Arg  
225 230 235 240  
Leu Glu Leu Asn Gly His Arg Arg Arg Leu Thr Trp Glu Ala Thr Pro  
245 250 255  
Arg Ser Ile His Glu Gly Ile Ala Thr Ala Ile Met Asn Ser Asp Cys  
260 265 270  
Leu Val Phe Asp Thr Ser Ile Ala Gln Leu Phe Ala Glu Asn Gly Asn  
275 280 285  
Leu Gly Ile Asn Val Thr Ile Ser Met Cys

290

295

<210> 3  
<211> 1432  
<212> DNA  
<213> Homo sapien

<220>  
<221> CDS  
<222> (25) ... (708)

<400> 3  
ggacttcggc ctgaccaggc cccc atg gct tca gaa gag cta cag aaa gat 51  
Met Ala Ser Glu Glu Leu Gln Lys Asp  
1 5

cta gaa gag gta aag gtg ttg ctg gaa aag gct act agg aaa aga gta 99  
Leu Glu Glu Val Lys Val Leu Leu Glu Lys Ala Thr Arg Lys Arg Val  
10 15 20 25

cgt gat gcc ctt aca gct gaa aaa tcc aag att gag aca gaa atc aag 147  
Arg Asp Ala Leu Thr Ala Glu Lys Ser Lys Ile Glu Thr Glu Ile Lys  
30 35 40

aac aag atg caa cag aaa tca cag aag aaa gca gaa ctt ctt gat aat 195  
Asn Lys Met Gln Gln Lys Ser Gln Lys Lys Ala Glu Leu Leu Asp Asn  
45 50 55

gaa aaa cca gct gct gtg gtt gct ccc att aca acg ggc tat acg gtg 243  
Glu Lys Pro Ala Ala Val Val Ala Pro Ile Thr Thr Gly Tyr Thr Val  
60 65 70

aaa atc agt aat tat gga tgg gat cag tca gat aag ttt gtg aaa atc 291  
Lys Ile Ser Asn Tyr Gly Trp Asp Gln Ser Asp Lys Phe Val Lys Ile  
75 80 85

tac att acc tta act gga gtt cat caa gtt ccc act gag aat gtg cag 339  
Tyr Ile Thr Leu Thr Gly Val His Gln Val Pro Thr Glu Asn Val Gln  
90 95 100 105

gtg cat ttc aca gag agg tca ttt gat ctt ttg gta aag aat cta aat 387  
Val His Phe Thr Glu Arg Ser Phe Asp Leu Leu Val Lys Asn Leu Asn  
110 115 120

ggg aag agt tac tcc atg att gtg aac aat ctc ttg aaa ccc atc tct 435  
Gly Lys Ser Tyr Ser Met Ile Val Asn Asn Leu Leu Lys Pro Ile Ser  
125 130 135

gtg gaa ggc agt tca aaa aaa gtc aag act gat aca gtt ctt ata ttg 483  
Val Glu Gly Ser Ser Lys Lys Val Lys Thr Asp Thr Val Leu Ile Leu  
140 145 150

tgt aga aag aaa gtg gaa aac aca agg tgg gat tac ctg acc cag gtt 531  
Cys Arg Lys Lys Val Glu Asn Thr Arg Trp Asp Tyr Leu Thr Gln Val  
155 160 165

gaa aag gag tgc aaa gaa aaa gag aag ccc tcc tat gac act gaa aca 579  
Glu Lys Glu Cys Lys Glu Lys Pro Ser Tyr Asp Thr Glu Thr  
170 175 180 185

gat cct agt gag gga ttg atg aat gtt cta aag aaa att tat gaa gat 627  
Asp Pro Ser Glu Gly Leu Met Asn Val Leu Lys Lys Ile Tyr Glu Asp  
190 195 200

gga gac gat gat atg aag cga acc att aat aaa gcc tgg gtg gaa tca 675  
Gly Asp Asp Asp Met Lys Arg Thr Ile Asn Lys Ala Trp Val Glu Ser  
205 210 215

aga gag aag caa gcc aaa gga gac acg gaa ttt tgagacttta aagtgcgttt 728  
Arg Glu Lys Gln Ala Lys Gly Asp Thr Glu Phe  
220 225

gggaactgtg atgtgatgtg gaaatactga tgtttccagt aaggaaatat tggtgagctg 788  
catatataaa tttgacagat agctatttac atagccttct aagtaaaggc aatgaattct 848  
ccatcccta ctggaggatt tatttaataa aaatatgctt attaaacact cctgcaaaga 908  
tggtttatt agtaccctgg tcattttgtt caaggaaggg ttatattgca ttctcacgtg 968  
aaatataaaa agcaagtctt gcccaataaa aacgctacat tgtgtgtatt ttttgttcag 1028  
ctaagaattt gaaaagtatt tgcttgcctt ttaagttact gacatcagct tccaccagt 1088  
taaaaattga gtaaaacctg aagttttgca taaaatgcaa atcggtgcct gtgcttgaag 1148  
gttgctgttag agcatctgac cccttattac caccttaagc aatgtatatg ccatgcatta 1208  
ccatgcacta attcaatcac aggtgtttct atctagattt aaatatattt gtcaatgaat 1268  
gtgaaataga aaatctaaac atgacaataa tagacatatc tttgtatgtt accagttgt 1328  
tttgcgtgg atcagatgtt ttataaaagt aataaccata aagcaaaaaa taatttgaaa 1388  
gccccgtctat tcctatgctc aataaagtta agttttctt catt 1432

<210> 4  
<211> 228  
<212> PRT  
<213> Homo sapien

<400> 4  
Met Ala Ser Glu Glu Leu Gln Lys Asp Leu Glu Glu Val Lys Val Leu  
1 5 10 15  
Leu Glu Lys Ala Thr Arg Lys Arg Val Arg Asp Ala Leu Thr Ala Glu  
20 25 30  
Lys Ser Lys Ile Glu Thr Glu Ile Lys Asn Lys Met Gln Gln Lys Ser  
35 40 45  
Gln Lys Lys Ala Glu Leu Leu Asp Asn Glu Lys Pro Ala Ala Val Val  
50 55 60  
Ala Pro Ile Thr Thr Gly Tyr Thr Val Lys Ile Ser Asn Tyr Gly Trp  
65 70 75 80  
Asp Gln Ser Asp Lys Phe Val Lys Ile Tyr Ile Thr Leu Thr Gly Val  
85 90 95  
His Gln Val Pro Thr Glu Asn Val Gln Val His Phe Thr Glu Arg Ser  
100 105 110

Phe Asp Leu Leu Val Lys Asn Leu Asn Gly Lys Ser Tyr Ser Met Ile  
115 120 125  
Val Asn Asn Leu Leu Lys Pro Ile Ser Val Glu Gly Ser Ser Lys Lys  
130 135 140  
Val Lys Thr Asp Thr Val Leu Ile Leu Cys Arg Lys Lys Val Glu Asn  
145 150 155 160  
Thr Arg Trp Asp Tyr Leu Thr Gln Val Glu Lys Glu Cys Lys Glu Lys  
165 170 175  
Glu Lys Pro Ser Tyr Asp Thr Glu Thr Asp Pro Ser Glu Gly Leu Met  
180 185 190  
Asn Val Leu Lys Ile Tyr Glu Asp Gly Asp Asp Met Lys Arg  
195 200 205  
Thr Ile Asn Lys Ala Trp Val Glu Ser Arg Glu Lys Gln Ala Lys Gly  
210 215 220  
Asp Thr Glu Phe  
225

<210> 5  
<211> 1413  
<212> DNA  
<213> Homo sapien

<220>  
<221> CDS  
<222> (25) . . . (264)

<400> 5  
ggacttcggc ctgaccaggc cccc atg gct tca gaa gag cta cag aaa gat 51  
Met Ala Ser Glu Glu Leu Gln Lys Asp  
1 5

cta gaa gag gta aag gtg ttg ctg gaa aag gct act agg aaa aga gta 99  
Leu Glu Glu Val Lys Val Leu Leu Glu Lys Ala Thr Arg Lys Arg Val  
10 15 20 25

cgt gat gcc ctt aca gct gaa aaa tcc aag att gag aca gaa atc aag 147  
Arg Asp Ala Leu Thr Ala Glu Lys Ser Lys Ile Glu Thr Glu Ile Lys  
30 35 40

aac aag atg caa cag aaa tca cag aag aaa gca gaa ctt ctt gat aat 195  
Asn Lys Met Gln Gln Lys Ser Gln Lys Lys Ala Glu Leu Leu Asp Asn  
45 50 55

gaa aaa cca gct gct gtg gtt gct ccc att aca acg ggc tat acg gat 243  
Glu Lys Pro Ala Ala Val Val Ala Pro Ile Thr Thr Gly Tyr Thr Asp  
60 65 70

ggg atc agt cag ata agt ttg tgaaaatcta cattacctta actggagttc 294  
Gly Ile Ser Gln Ile Ser Leu  
75 80

atcaagttcc cactgagaat gtgcaggtgc atttcacaga gaggtcattt gatctttgg 354

taaagaatct aaatggaaag agttactcca tgattgtgaa caatctctg aaacccatct 414  
ctgtggaagg cagttcaaaa aaagtcaaga ctgatacagt tcttatattg tgtagaaaga 474  
aagtggaaaa cacaaggtgg gattacctga cccaggttga aaaggagtgc aaagaaaaag 534  
agaagccctc ctatgacact gaaacagatc ctagtgaggg attgatgaat gttctaaaga 594  
aaatttatga agatggagac gatgatatga agcgaaccat taataaagcc tgggtggaat 654  
caagagagaa gcaagccaaa ggagacacgg aattttgaga ctttaaagtc gttttggaa 714  
ctgtgatgtg atgtggaaat actgatgtt ccagtaaggg aatattggtg agctgcatat 774  
ataaaatttg a cagatagcta tttacatagc cttctaagta aaggcaatga atttccatt 834  
tcctactgga ggatttattt aaataaaata tgcttattaa acactcctgc aaagatggtt 894  
ttatttagtac cctggtcatt ttgttcaagg aagggttata ttgcattctc acgtgaaata 954  
taaaaagcaa gtctgcccataaaaaacgc tacattgtgt gtatttttgc 1014  
aattggaaaa gtatttgctt gcctttaag ttactgacat cagctccac cagtgtaaaa 1074  
attgagtaaa acctgaagtt ttgcataaaa tgcaa atcg tgcctgtgct tgaagggtgc 1134  
tgttagagcat ctgaccctt attaccacct taagcaatgt atatgccatg cattaccatg 1194  
cactaattca atcacaggtt tttctatcta gatttaaata tatttgc taaatgtgga 1254  
atagaaaatc taaacatgac aataatagac atatcttgc atggtaccag ttgtttgc 1314  
cgtggatcag atggttata aaagtaataa ccataaagca aaaaataatt tgaaagcccg 1374  
tctattccta tgctcaataa agttaagtt ttcttcatt 1413

<210> 6  
<211> 80  
<212> PRT  
<213> Homo sapien

<400> 6  
Met Ala Ser Glu Glu Leu Gln Lys Asp Leu Glu Glu Val Lys Val Leu  
1 5 10 15  
Leu Glu Lys Ala Thr Arg Lys Arg Val Arg Asp Ala Leu Thr Ala Glu  
20 25 30  
Lys Ser Lys Ile Glu Thr Glu Ile Lys Asn Lys Met Gln Gln Lys Ser  
35 40 45  
Gln Lys Lys Ala Glu Leu Leu Asp Asn Glu Lys Pro Ala Ala Val Val  
50 55 60  
Ala Pro Ile Thr Thr Gly Tyr Thr Asp Gly Ile Ser Gln Ile Ser Leu  
65 70 75 80

<210> 7  
<211> 1673  
<212> DNA  
<213> Homo sapien

<220>  
<221> CDS  
<222> (61) ... (1389)

<400> 7  
ccggagggtg caggcgacgg gaagcgccgg tggtcgctg gggtccggct cctggagaac 60  
atg gcc cgg cct ccc ggg ggc tct ggt ccc ctc ctc gat tca gag cat 108  
Met Ala Arg Pro Pro Gly Gly Ser Gly Pro Leu Leu Asp Ser Glu His  
1 5 10 15

tct tca ctc cag aat aat gag caa ccc tct ttg gcc acc agc tcc aat 156

Ser Ser Leu Gln Asn Asn Glu Gln Pro Ser Leu Ala Thr Ser Ser Asn  
20 25 30

cag act agc atg cag gat gaa caa cca agt gat tca ttc caa gga cag 204  
Gln Thr Ser Met Gln Asp Glu Gln Pro Ser Asp Ser Phe Gln Gly Gln  
35 40 45

gca gcc cag tct ggt gtt tgg aat gac gac agt atg tta ggg cct agt 252  
Ala Ala Gln Ser Gly Val Trp Asn Asp Asp Ser Met Leu Gly Pro Ser  
50 55 60

caa aat ttt gaa gct gag tca att caa gat aat gcg cat atg gca gag 300  
Gln Asn Phe Glu Ala Glu Ser Ile Gln Asp Asn Ala His Met Ala Glu  
65 70 75 80

ggc aca ggt ttc tat ccc tca gaa ccc atg ctc tgt agt gaa tcg gtg 348  
Gly Thr Gly Phe Tyr Pro Ser Glu Pro Met Leu Cys Ser Glu Ser Val  
85 90 95

gaa ggg caa gtg cca cat tca tta gag acc ttg tat caa tca gct gac 396  
Glu Gly Gln Val Pro His Ser Leu Glu Thr Leu Tyr Gln Ser Ala Asp  
100 105 110

tgt tct gat gcc aat gat gcc ttg ata gtg ttg ata cat ctt ctc atg 444  
Cys Ser Asp Ala Asn Asp Ala Leu Ile Val Leu Ile His Leu Leu Met  
115 120 125

ttg gag tca ggt tac ata cct cag ggc acc gaa gcc aaa gca ctg tcc 492  
Leu Glu Ser Gly Tyr Ile Pro Gln Gly Thr Glu Ala Lys Ala Leu Ser  
130 135 140

atg ccg gag aag tgg aag ttg agc ggg gtg tat aag ctg cag tac atg 540  
Met Pro Glu Lys Trp Lys Leu Ser Gly Val Tyr Lys Leu Gln Tyr Met  
145 150 155 160

cat cct ctc tgc gag ggc agc tcc gct act ctc acc tgt gtg cct ttg 588  
His Pro Leu Cys Glu Gly Ser Ser Ala Thr Leu Thr Cys Val Pro Leu  
165 170 175

gga aac ctg att gtt gta aat gct aca cta aaa atc aac aat gag att 636  
Gly Asn Leu Ile Val Val Asn Ala Thr Leu Lys Ile Asn Asn Glu Ile  
180 185 190

aga agt gtg aaa aga ttg cag ctg cta cca aaa tct ttt att tgc aaa 684  
Arg Ser Val Lys Arg Leu Gln Leu Leu Pro Lys Ser Phe Ile Cys Lys  
195 200 205

gag aaa cta ggg gaa aat gta gcc aac ata tac aaa gat ctt cag aaa 732  
Glu Lys Leu Gly Glu Asn Val Ala Asn Ile Tyr Lys Asp Leu Gln Lys  
210 215 220

ctc tct cgc ctc ttt aaa gac cag ctg gtg tat cct ctt ctg gct ttt 780  
Leu Ser Arg Leu Phe Lys Asp Gln Leu Val Tyr Pro Leu Leu Ala Phe

225	230	235	240	
acc cga caa gca ctg aac cta cca gat gta ttt ggg ttg gtc gtc ctc				828
Thr Arg Gln Ala Leu Asn Leu Pro Asp Val Phe Gly Leu Val Val Leu				
245		250	255	
cca ttg gaa ctg aaa cta cgg atc ttc cga ctt ctg gat gtt cgt tcc				876
Pro Leu Glu Leu Lys Leu Arg Ile Phe Arg Leu Leu Asp Val Arg Ser				
260	265		270	
gtc ttg tct ttg tct gcg gtt tgt cgt gac ctc ttt act gct tca aat				924
Val Leu Ser Leu Ser Ala Val Cys Arg Asp Leu Phe Thr Ala Ser Asn				
275	280	285		
gac cca ctc ctg tgg agg ttt tta tat ctg cgt gat ttt cga gac aat				972
Asp Pro Leu Leu Trp Arg Phe Leu Tyr Leu Arg Asp Phe Arg Asp Asn				
290	295	300		
act gtc aga gtt caa gac aca gat tgg aaa gaa ctg tac agg aag agg				1020
Thr Val Arg Val Gln Asp Thr Asp Trp Lys Glu Leu Tyr Arg Lys Arg				
305	310	315	320	
cac ata caa aga aaa gaa tcc ccg aaa ggg cgg ttt gtg atg ctc ctg				1068
His Ile Gln Arg Lys Glu Ser Pro Lys Gly Arg Phe Val Met Leu Leu				
325	330	335		
cca tcg tca act cac acc att cca ttc tat ccc aac ccc ttg cac cct				1116
Pro Ser Ser Thr His Thr Ile Pro Phe Tyr Pro Asn Pro Leu His Pro				
340	345	350		
agg cca ttt cct agc tcc cgc ctt cct cca gga att atc ggg ggt gaa				1164
Arg Pro Phe Pro Ser Ser Arg Leu Pro Pro Gly Ile Ile Gly Gly Glu				
355	360	365		
tat gac caa aga cca aca ctt ccc tat gtt gga gac cca atc agt tca				1212
Tyr Asp Gln Arg Pro Thr Leu Pro Tyr Val Gly Asp Pro Ile Ser Ser				
370	375	380		
ctc att cct ggt cct ggg gag acg ccc agc cag ttt cct cca ctg aga				1260
Leu Ile Pro Gly Pro Gly Glu Thr Pro Ser Gln Phe Pro Pro Leu Arg				
385	390	395	400	
cca cgc ttt gat cca gtt ggc cca ctt cca gga cct aac ccc atc ttg				1308
Pro Arg Phe Asp Pro Val Gly Pro Leu Pro Gly Pro Asn Pro Ile Leu				
405	410	415		
cca ggg cga ggc ggc ccc aat gac aga ttt ccc ttt aga ccc agc agg				1356
Pro Gly Arg Gly Pro Asn Asp Arg Phe Pro Phe Arg Pro Ser Arg				
420	425	430		
ggg cgg cca act gat ggc cgg ctg tca ttc atg tgattgattt gtaattcat				1409
Gly Arg Pro Thr Asp Gly Arg Leu Ser Phe Met				
435	440			

ttctggagct ccattgttt ttgtttctaa actacagatg tcaactcctt ggggtgctga 1469  
tctcgagtgt tattttctga ttgtgggttt gagagttgca ctcccagaaa ccttttaaga 1529  
gatacattta tagcccttagg ggtggtatga cccaaagggtt cctctgtgac aaggttggcc 1589  
ttggaaatag ttggctgcca atctccctgc tcttggttct cctcttagatt gaagtttggtt 1649  
ttctgatgct gttcttacca gatt 1673

<210> 8  
<211> 443  
<212> PRT  
<213> Homo sapien

<400> 8  
Met Ala Arg Pro Pro Gly Gly Ser Gly Pro Leu Leu Asp Ser Glu His  
1 5 10 15  
Ser Ser Leu Gln Asn Asn Glu Gln Pro Ser Leu Ala Thr Ser Ser Asn  
20 25 30  
Gln Thr Ser Met Gln Asp Glu Gln Pro Ser Asp Ser Phe Gln Gly Gln  
35 40 45  
Ala Ala Gln Ser Gly Val Trp Asn Asp Asp Ser Met Leu Gly Pro Ser  
50 55 60  
Gln Asn Phe Glu Ala Glu Ser Ile Gln Asp Asn Ala His Met Ala Glu  
65 70 75 80  
Gly Thr Gly Phe Tyr Pro Ser Glu Pro Met Leu Cys Ser Glu Ser Val  
85 90 95  
Glu Gly Gln Val Pro His Ser Leu Glu Thr Leu Tyr Gln Ser Ala Asp  
100 105 110  
Cys Ser Asp Ala Asn Asp Ala Leu Ile Val Leu Ile His Leu Leu Met  
115 120 125  
Leu Glu Ser Gly Tyr Ile Pro Gln Gly Thr Glu Ala Lys Ala Leu Ser  
130 135 140  
Met Pro Glu Lys Trp Lys Leu Ser Gly Val Tyr Lys Leu Gln Tyr Met  
145 150 155 160  
His Pro Leu Cys Glu Gly Ser Ser Ala Thr Leu Thr Cys Val Pro Leu  
165 170 175  
Gly Asn Leu Ile Val Val Asn Ala Thr Leu Lys Ile Asn Asn Glu Ile  
180 185 190  
Arg Ser Val Lys Arg Leu Gln Leu Leu Pro Lys Ser Phe Ile Cys Lys  
195 200 205  
Glu Lys Leu Gly Glu Asn Val Ala Asn Ile Tyr Lys Asp Leu Gln Lys  
210 215 220  
Leu Ser Arg Leu Phe Lys Asp Gln Leu Val Tyr Pro Leu Leu Ala Phe  
225 230 235 240  
Thr Arg Gln Ala Leu Asn Leu Pro Asp Val Phe Gly Leu Val Val Leu  
245 250 255  
Pro Leu Glu Leu Lys Leu Arg Ile Phe Arg Leu Leu Asp Val Arg Ser  
260 265 270  
Val Leu Ser Leu Ser Ala Val Cys Arg Asp Leu Phe Thr Ala Ser Asn  
275 280 285  
Asp Pro Leu Leu Trp Arg Phe Leu Tyr Leu Arg Asp Phe Arg Asp Asn  
290 295 300  
Thr Val Arg Val Gln Asp Thr Asp Trp Lys Glu Leu Tyr Arg Lys Arg  
305 310 315 320

His Ile Gln Arg Lys Glu Ser Pro Lys Gly Arg Phe Val Met Leu Leu  
325 330 335  
Pro Ser Ser Thr His Thr Ile Pro Phe Tyr Pro Asn Pro Leu His Pro  
340 345 350  
Arg Pro Phe Pro Ser Ser Arg Leu Pro Pro Gly Ile Ile Gly Gly Glu  
355 360 365  
Tyr Asp Gln Arg Pro Thr Leu Pro Tyr Val Gly Asp Pro Ile Ser Ser  
370 375 380  
Leu Ile Pro Gly Pro Gly Glu Thr Pro Ser Gln Phe Pro Pro Leu Arg  
385 390 395 400  
Pro Arg Phe Asp Pro Val Gly Pro Leu Pro Gly Pro Asn Pro Ile Leu  
405 410 415  
Pro Gly Arg Gly Gly Pro Asn Asp Arg Phe Pro Phe Arg Pro Ser Arg  
420 425 430  
Gly Arg Pro Thr Asp Gly Arg Leu Ser Phe Met  
435 440

<210> 9

<211> 1892

<212> DNA

<213> Homo sapien

<220>

<221> CDS

<222> (43) ... (1608)

<400> 9

gcccgttccgg ggtccaggcc cctcgccggcgc tc atg agg ctg cgg 54  
Met Arg Leu Arg  
1

gtg cgg ctt ctg aag cgg acc tgg ccg ctg gag gtg ccc gag acg gag 102  
Val Arg Leu Leu Lys Arg Thr Trp Pro Leu Glu Val Pro Glu Thr Glu  
5 10 15 20

ccg acg ctg ggg cat ttg cgc tcg cac ctg agg cag tcc ctg ctg tgc 150  
Pro Thr Leu Gly His Leu Arg Ser His Leu Arg Gln Ser Leu Leu Cys  
25 30 35

acc tgg ggg tac agt tct aat acc cga ttt aca att aca ttg aac tac 198  
Thr Trp Gly Tyr Ser Ser Asn Thr Arg Phe Thr Ile Thr Leu Asn Tyr  
40 45 50

aag gat ccc ctc act gga gat gaa gag acc ttg gct tca tat ggg att 246  
Lys Asp Pro Leu Thr Gly Asp Glu Glu Thr Leu Ala Ser Tyr Gly Ile  
55 60 65

gtt tct ggg gac ttg ata tgt ttg att ctt caa gat gac att cca gcg 294  
Val Ser Gly Asp Leu Ile Cys Leu Ile Leu Gln Asp Asp Ile Pro Ala  
70 75 80

cct aat ata cct tca tcc aca gat tca gag cat tct tca ctc cag aat 342

Pro	Asn	Ile	Pro	Ser	Ser	Thr	Asp	Ser	Glu	His	Ser	Ser	Leu	Gln	Asn	
85				90					95				100			
aat	gag	caa	ccc	tct	ttg	gcc	acc	agc	tcc	aat	cag	act	agc	atg	cag	390
Asn	Glu	Gln	Pro	Ser	Leu	Ala	Thr	Ser	Ser	Asn	Gln	Thr	Ser	Met	Gln	
	105				110					115						
gat	gaa	caa	cca	agt	gat	tca	ttc	caa	gga	cag	gca	gcc	cag	tct	ggt	438
Asp	Glu	Gln	Pro	Ser	Asp	Ser	Phe	Gln	Gly	Gln	Ala	Ala	Gln	Ser	Gly	
	120				125					130						
gtt	tgg	aat	gac	gac	agt	atg	tta	ggg	cct	agt	caa	aat	ttt	gaa	gct	486
Val	Trp	Asn	Asp	Asp	Ser	Met	Leu	Gly	Pro	Ser	Gln	Asn	Phe	Glu	Ala	
	135				140					145						
gag	tca	att	caa	gat	aat	gcg	cat	atg	gca	gag	ggc	aca	ggt	ttc	tat	534
Glu	Ser	Ile	Gln	Asp	Asn	Ala	His	Met	Ala	Glu	Gly	Thr	Gly	Phe	Tyr	
	150				155					160						
ccc	tca	gaa	ccc	atg	ctc	tgt	agt	gaa	tcg	gtg	gaa	ggg	caa	gtg	cca	582
Pro	Ser	Glu	Pro	Met	Leu	Cys	Ser	Glu	Ser	Val	Glu	Gly	Gln	Val	Pro	
	165			170					175				180			
cat	tca	tta	gag	acc	ttg	tat	caa	tca	gct	gac	tgt	tct	gat	gcc	aat	630
His	Ser	Leu	Glu	Thr	Leu	Tyr	Gln	Ser	Ala	Asp	Cys	Ser	Asp	Ala	Asn	
	185			190					195							
gat	gcc	ttg	ata	gtg	ttg	ata	cat	ctt	ctc	atg	ttg	gag	tca	ggt	tac	678
Asp	Ala	Leu	Ile	Val	Leu	Ile	His	Leu	Leu	Met	Leu	Glu	Ser	Gly	Tyr	
	200			205						210						
ata	cct	cag	ggc	acc	gaa	gcc	aaa	gca	ctg	tcc	atg	ccg	gag	aag	tgg	726
Ile	Pro	Gln	Gly	Thr	Glu	Ala	Lys	Ala	Leu	Ser	Met	Pro	Glu	Lys	Trp	
	215			220					225							
aag	ttg	agc	ggg	gtg	tat	aag	ctg	cag	tac	atg	cat	cct	ctc	tgc	gag	774
Lys	Leu	Ser	Gly	Val	Tyr	Lys	Leu	Gln	Tyr	Met	His	Pro	Leu	Cys	Glu	
	230			235					240							
ggc	agc	tcc	gct	act	ctc	acc	tgt	gtg	cct	ttg	gga	aac	ctg	att	gtt	822
Gly	Ser	Ser	Ala	Thr	Leu	Thr	Cys	Val	Pro	Leu	Gly	Asn	Leu	Ile	Val	
	245			250					255			260				
gta	aat	gct	aca	cta	aaa	atc	aac	aat	gag	att	aga	agt	gtg	aaa	aga	870
Val	Asn	Ala	Thr	Leu	Lys	Ile	Asn	Asn	Glu	Ile	Arg	Ser	Val	Lys	Arg	
	265			270						275						
ttg	cag	ctg	cta	cca	aaa	tct	ttt	att	tgc	aaa	gag	aaa	cta	ggg	gaa	918
Leu	Gln	Leu	Leu	Pro	Lys	Ser	Phe	Ile	Cys	Lys	Glu	Lys	Leu	Gly	Glu	
	280			285						290						
aat	gta	gcc	aac	ata	tac	aaa	gat	ctt	cag	aaa	ctc	tct	cgc	ctc	ttt	966
Asn	Val	Ala	Asn	Ile	Tyr	Lys	Asp	Leu	Gln	Lys	Leu	Ser	Arg	Leu	Phe	

295	300	305	
aaa gac cag ctg gtg tat cct ctt ctg gct ttt acc cga caa gca ctg Lys Asp Gln Leu Val Tyr Pro Leu Leu Ala Phe Thr Arg Gln Ala Leu 310	315	320	1014
aac cta cca gat gta ttt ggg ttg gtc gtc ctc cca ttg gaa ctg aaa Asn Leu Pro Asp Val Phe Gly Leu Val Val Leu Pro Leu Glu Leu Lys 325	330	335	1062
cta cggtt atc ttc cga ctt ctg gat gtt cgt tcc gtc ttg tct ttg tct Leu Arg Ile Phe Arg Leu Leu Asp Val Arg Ser Val Leu Ser Leu Ser 345	350	355	1110
gcg gtt tgt cgt gac ctc ttt act gct tca aat gac cca ctc ctg tgg Ala Val Cys Arg Asp Leu Phe Thr Ala Ser Asn Asp Pro Leu Leu Trp 360	365	370	1158
agg ttt tta tat ctg cgt gat ttt cga gac aat act gtc aga gtt caa Arg Phe Leu Tyr Leu Arg Asp Phe Arg Asp Asn Thr Val Arg Val Gln 375	380	385	1206
gac aca gat tgg aaa gaa ctg tac agg aag agg cac ata caa aga aaa Asp Thr Asp Trp Lys Glu Leu Tyr Arg Lys Arg His Ile Gln Arg Lys 390	395	400	1254
gaa tcc ccg aaa ggg cgg ttt gtg atg ctc ctg cca tcg tca act cac Glu Ser Pro Lys Gly Arg Phe Val Met Leu Leu Pro Ser Ser Thr His 405	410	415	1302
acc att cca ttc tat ccc aac ccc ttg cac cct agg cca ttt cct agc Thr Ile Pro Phe Tyr Pro Asn Pro Leu His Pro Arg Pro Phe Pro Ser 425	430	435	1350
tcc cgc ctt cct cca gga att atc ggg ggt gaa tat gac caa aga cca Ser Arg Leu Pro Pro Gly Ile Ile Gly Glu Tyr Asp Gln Arg Pro 440	445	450	1398
aca ctt ccc tat gtt gga gac cca atc agt tca ctc att cct ggt cct Thr Leu Pro Tyr Val Gly Asp Pro Ile Ser Ser Leu Ile Pro Gly Pro 455	460	465	1446
ggg gag acg ccc agc cag ttt cct cca ctg aga cca cgc ttt gat cca Gly Glu Thr Pro Ser Gln Phe Pro Pro Leu Arg Pro Arg Phe Asp Pro 470	475	480	1494
gtt ggc cca ctt cca gga cct aac ccc atc ttg cca ggg cga ggc ggc Val Gly Pro Leu Pro Gly Pro Asn Pro Ile Leu Pro Gly Arg Gly Gly 485	490	495	1542
ccc aat gac aga ttt ccc ttt aga ccc agc agg ggt cgg cca act gat Pro Asn Asp Arg Phe Pro Phe Arg Pro Ser Arg Gly Arg Pro Thr Asp 505	510	515	1590

ggc cggttgc tca ttc atg tgattgattt gtaatttcat ttctggagct 1638  
Gly Arg Leu Ser Phe Met  
520

ccattttttt ttgtttctaa actacagatg tcaactcctt ggggtgctga tctcgagtgt 1698  
tattttctga ttgtgggttt gagagttgca ctccccaaaaa ccttttaaga gatacattta 1758  
tagccctagg ggtggatga cccaaaggtt cctctgtgac aagggtggcc ttgggaatag 1818  
ttggctgcca atctccctgc tcttggttct cctcttagatt gaagtttgtt ttctgatgct 1878  
gttcttacca gatt 1892

<210> 10  
<211> 522  
<212> PRT  
<213> Homo sapien

<400> 10  
Met Arg Leu Arg Val Arg Leu Leu Lys Arg Thr Trp Pro Leu Glu Val  
1 5 10 15  
Pro Glu Thr Glu Pro Thr Leu Gly His Leu Arg Ser His Leu Arg Gln  
20 25 30  
Ser Leu Leu Cys Thr Trp Gly Tyr Ser Ser Asn Thr Arg Phe Thr Ile  
35 40 45  
Thr Leu Asn Tyr Lys Asp Pro Leu Thr Gly Asp Glu Glu Thr Leu Ala  
50 55 60  
Ser Tyr Gly Ile Val Ser Gly Asp Leu Ile Cys Leu Ile Leu Gln Asp  
65 70 75 80  
Asp Ile Pro Ala Pro Asn Ile Pro Ser Ser Thr Asp Ser Glu His Ser  
85 90 95  
Ser Leu Gln Asn Asn Glu Gln Pro Ser Leu Ala Thr Ser Ser Asn Gln  
100 105 110  
Thr Ser Met Gln Asp Glu Gln Pro Ser Asp Ser Phe Gln Gly Gln Ala  
115 120 125  
Ala Gln Ser Gly Val Trp Asn Asp Asp Ser Met Leu Gly Pro Ser Gln  
130 135 140  
Asn Phe Glu Ala Glu Ser Ile Gln Asp Asn Ala His Met Ala Glu Gly  
145 150 155 160  
Thr Gly Phe Tyr Pro Ser Glu Pro Met Leu Cys Ser Glu Ser Val Glu  
165 170 175  
Gly Gln Val Pro His Ser Leu Glu Thr Leu Tyr Gln Ser Ala Asp Cys  
180 185 190  
Ser Asp Ala Asn Asp Ala Leu Ile Val Leu Ile His Leu Leu Met Leu  
195 200 205  
Glu Ser Gly Tyr Ile Pro Gln Gly Thr Glu Ala Lys Ala Leu Ser Met  
210 215 220  
Pro Glu Lys Trp Lys Leu Ser Gly Val Tyr Lys Leu Gln Tyr Met His  
225 230 235 240  
Pro Leu Cys Glu Gly Ser Ser Ala Thr Leu Thr Cys Val Pro Leu Gly  
245 250 255  
Asn Leu Ile Val Val Asn Ala Thr Leu Lys Ile Asn Asn Glu Ile Arg  
260 265 270  
Ser Val Lys Arg Leu Gln Leu Leu Pro Lys Ser Phe Ile Cys Lys Glu  
275 280 285

Lys Leu Gly Glu Asn Val Ala Asn Ile Tyr Lys Asp Leu Gln Lys Leu  
290 295 300  
Ser Arg Leu Phe Lys Asp Gln Leu Val Tyr Pro Leu Leu Ala Phe Thr  
305 310 315 320  
Arg Gln Ala Leu Asn Leu Pro Asp Val Phe Gly Leu Val Val Leu Pro  
325 330 335  
Leu Glu Leu Lys Leu Arg Ile Phe Arg Leu Leu Asp Val Arg Ser Val  
340 345 350  
Leu Ser Leu Ser Ala Val Cys Arg Asp Leu Phe Thr Ala Ser Asn Asp  
355 360 365  
Pro Leu Leu Trp Arg Phe Leu Tyr Leu Arg Asp Phe Arg Asp Asn Thr  
370 375 380  
Val Arg Val Gln Asp Thr Asp Trp Lys Glu Leu Tyr Arg Lys Arg His  
385 390 395 400  
Ile Gln Arg Lys Glu Ser Pro Lys Gly Arg Phe Val Met Leu Leu Pro  
405 410 415  
Ser Ser Thr His Thr Ile Pro Phe Tyr Pro Asn Pro Leu His Pro Arg  
420 425 430  
Pro Phe Pro Ser Ser Arg Leu Pro Pro Gly Ile Ile Gly Gly Glu Tyr  
435 440 445  
Asp Gln Arg Pro Thr Leu Pro Tyr Val Gly Asp Pro Ile Ser Ser Leu  
450 455 460  
Ile Pro Gly Pro Gly Glu Thr Pro Ser Gln Phe Pro Pro Leu Arg Pro  
465 470 475 480  
Arg Phe Asp Pro Val Gly Pro Leu Pro Gly Pro Asn Pro Ile Leu Pro  
485 490 495  
Gly Arg Gly Gly Pro Asn Asp Arg Phe Pro Phe Arg Pro Ser Arg Gly  
500 505 510  
Arg Pro Thr Asp Gly Arg Leu Ser Phe Met  
515 520

<210> 11  
<211> 1075  
<212> DNA  
<213> Homo sapien

<220>  
<221> CDS  
<222> (52)...(1032)

<400> 11  
gctaatttag ctttatttct tcttttagcc atcaagttt atcgttagggc t atg caa 57  
Met Gln  
1

ctt gta cct gat ata gag ttc aag att act tat acc cgg tct cca gat 105  
Leu Val Pro Asp Ile Glu Phe Lys Ile Thr Tyr Thr Arg Ser Pro Asp  
5 10 15

ggt gat ggc gtt gga aac agc tac att gaa gat aat gat gat gac agc 153  
Gly Asp Gly Val Gly Asn Ser Tyr Ile Glu Asp Asn Asp Asp Asp Ser  
20 25 30

aaa atg gca gat ctc ttg tcc tac ttc cag cag caa ctc aca ttt cag			201
Lys Met Ala Asp Leu Leu Ser Tyr Phe Gln Gln Gln Leu Thr Phe Gln			
35	40	45	50
gag tct gtg ctt aaa ctg tgt cag cct gag ctt gag agc agt cag att			249
Glu Ser Val Leu Lys Leu Cys Gln Pro Glu Leu Glu Ser Ser Gln Ile			
55	60	65	
cac ata tca gtg ctg cca atg gag gtc ctg atg tac atc ttc cga tgg			297
His Ile Ser Val Leu Pro Met Glu Val Leu Met Tyr Ile Phe Arg Trp			
70	75	80	
gtg gtg tct agt gac ttg gac ctc aga tca ttg gag cag ttg tcg ctg			345
Val Val Ser Ser Asp Leu Asp Leu Arg Ser Leu Glu Gln Leu Ser Leu			
85	90	95	
gtg tgc aga gga ttc tac atc tgt gcc aga gac cct gaa ata tgg cgt			393
Val Cys Arg Gly Phe Tyr Ile Cys Ala Arg Asp Pro Glu Ile Trp Arg			
100	105	110	
ctg gcc tgc ttg aaa gtt tgg ggc aga agc tgt att aaa ctt gtt ccg			441
Leu Ala Cys Leu Lys Val Trp Gly Arg Ser Cys Ile Lys Leu Val Pro			
115	120	125	130
tac acg tcc tgg aga gag atg ttt tta gaa cgg cct cgt gtt cgg ttt			489
Tyr Thr Ser Trp Arg Glu Met Phe Leu Glu Arg Pro Arg Val Arg Phe			
135	140	145	
gat ggc gtg tat atc agt aaa acc aca tat att cgt caa ggg gaa cag			537
Asp Gly Val Tyr Ile Ser Lys Thr Thr Tyr Ile Arg Gln Gly Glu Gln			
150	155	160	
tct ctt gat ggt ttc tat aga gcc tgg cac caa gtg gaa tat tac agg			585
Ser Leu Asp Gly Phe Tyr Arg Ala Trp His Gln Val Glu Tyr Tyr Arg			
165	170	175	
tac ata aga ttc ttt cct gat ggc cat gtg atg atg ttg aca acc cct			633
Tyr Ile Arg Phe Phe Pro Asp Gly His Val Met Met Leu Thr Thr Pro			
180	185	190	
gaa gag cct cag tcc att gtt cca cgt tta aga act agg aat acc agg			681
Glu Glu Pro Gln Ser Ile Val Pro Arg Leu Arg Thr Arg Asn Thr Arg			
195	200	205	210
act gat gca att cta ctg ggt cac tat cgc ttg tca caa gac aca gac			729
Thr Asp Ala Ile Leu Leu Gly His Tyr Arg Leu Ser Gln Asp Thr Asp			
215	220	225	
aat cag acc aaa gta ttt gct gta ata act aag aaa aaa gaa gaa aaa			777
Asn Gln Thr Lys Val Phe Ala Val Ile Thr Lys Lys Lys Glu Glu Lys			
230	235	240	

cca ctt gac tat aaa tac aga tat ttt cgt cgt gtc cct gta caa gaa Pro Leu Asp Tyr Lys Tyr Arg Tyr Phe Arg Arg Val Pro Val Gln Glu	245	250	255	825
gca gat cag agt ttt cat gtg ggg cta cag cta tgt tcc agt ggt cac Ala Asp Gln Ser Phe His Val Gly Leu Gln Leu Cys Ser Ser Gly His	260	265	270	873
cag agg ttc aac aaa ctc atc tgg ata cat cat tct tgt cac att act Gln Arg Phe Asn Lys Leu Ile Trp Ile His His Ser Cys His Ile Thr	275	280	285	921
tac aaa tca act ggt gag act gca gtc agt gct ttt gag att gac aag Tyr Lys Ser Thr Gly Glu Thr Ala Val Ser Ala Phe Glu Ile Asp Lys	295	300	305	969
atg tac acc ccc ttg ttc gcc aga gta agg agc tac aca gct ttc Met Tyr Thr Pro Leu Phe Phe Ala Arg Val Arg Ser Tyr Thr Ala Phe	310	315	320	1017
tca gaa agg cct ctg tagagcctca agtccagtc tctatcactt ttgcataaat Ser Glu Arg Pro Leu	325			1072
taa				1075
<210> 12				
<211> 327				
<212> PRT				
<213> Homo sapien				
<400> 12				
Met Gln Leu Val Pro Asp Ile Glu Phe Lys Ile Thr Tyr Thr Arg Ser	1	5	10	15
Pro Asp Gly Asp Gly Val Gly Asn Ser Tyr Ile Glu Asp Asn Asp Asp	20	25	30	
Asp Ser Lys Met Ala Asp Leu Leu Ser Tyr Phe Gln Gln Leu Thr	35	40	45	
Phe Gln Glu Ser Val Leu Lys Leu Cys Gln Pro Glu Leu Glu Ser Ser	50	55	60	
Gln Ile His Ile Ser Val Leu Pro Met Glu Val Leu Met Tyr Ile Phe	65	70	75	80
Arg Trp Val Val Ser Ser Asp Leu Asp Leu Arg Ser Leu Glu Gln Leu	85	90	95	
Ser Leu Val Cys Arg Gly Phe Tyr Ile Cys Ala Arg Asp Pro Glu Ile	100	105	110	
Trp Arg Leu Ala Cys Leu Lys Val Trp Gly Arg Ser Cys Ile Lys Leu	115	120	125	
Val Pro Tyr Thr Ser Trp Arg Glu Met Phe Leu Glu Arg Pro Arg Val	130	135	140	
Arg Phe Asp Gly Val Tyr Ile Ser Lys Thr Thr Tyr Ile Arg Gln Gly	145	150	155	160
Glu Gln Ser Leu Asp Gly Phe Tyr Arg Ala Trp His Gln Val Glu Tyr				

165	170	175
Tyr Arg Tyr Ile Arg Phe Phe Pro Asp Gly His Val Met Met Leu Thr		
180	185	190
Thr Pro Glu Glu Pro Gln Ser Ile Val Pro Arg Leu Arg Thr Arg Asn		
195	200	205
Thr Arg Thr Asp Ala Ile Leu Leu Gly His Tyr Arg Leu Ser Gln Asp		
210	215	220
Thr Asp Asn Gln Thr Lys Val Phe Ala Val Ile Thr Lys Lys Lys Glu		
225	230	235
Glu Lys Pro Leu Asp Tyr Lys Tyr Arg Tyr Phe Arg Arg Val Pro Val		
245	250	255
Gln Glu Ala Asp Gln Ser Phe His Val Gly Leu Gln Leu Cys Ser Ser		
260	265	270
Gly His Gln Arg Phe Asn Lys Leu Ile Trp Ile His His Ser Cys His		
275	280	285
Ile Thr Tyr Lys Ser Thr Gly Glu Thr Ala Val Ser Ala Phe Glu Ile		
290	295	300
Asp Lys Met Tyr Thr Pro Leu Phe Phe Ala Arg Val Arg Ser Tyr Thr		
305	310	315
Ala Phe Ser Glu Arg Pro Leu		
325		

<210> 13  
<211> 2037  
<212> DNA  
<213> Homo sapien

<220>  
<221> CDS  
<222> (70) ... (1410)

<400> 13  
aagcaggcag gttgctcagc tgcccccggc gcgggttcctc cacctgaggc agactccacg 60  
tcggctggc atg agc cgg cgc ccc tgc agc tgc gcc cta cgg cca ccc cgc 111  
Met Ser Arg Arg Pro Cys Ser Cys Ala Leu Arg Pro Pro Arg  
1 5 10

tgc tcc tgc agc gcc agc ccc agc gca gtg aca gcc gcc ggg cgc cct 159  
Cys Ser Cys Ser Ala Ser Pro Ser Ala Val Thr Ala Ala Gly Arg Pro  
15 20 25 30

cga ccc tcg gat agt tgt aaa gaa gaa agt tct acc ctt tct gtc aaa 207  
Arg Pro Ser Asp Ser Cys Lys Glu Ser Ser Thr Leu Ser Val Lys  
35 40 45

atg aag tgt gat ttt aat tgt aac cat gtt cat tcc gga ctt aaa ctg 255  
Met Lys Cys Asp Phe Asn Cys Asn His Val His Ser Gly Leu Lys Leu  
50 55 60

gta aaa cct gat gac att gga aga cta gtt tcc tac acc cct gca tat 303  
Val Lys Pro Asp Asp Ile Gly Arg Leu Val Ser Tyr Thr Pro Ala Tyr  
65 70 75

ttg gaa ggt tcc tgt aaa gac tgc att aaa gac tat gaa agg ctg tca Leu Glu Gly Ser Cys Lys Asp Cys Ile Lys Asp Tyr Glu Arg Leu Ser 80 85 90	351
tgt att ggg tca ccg att gtg agc cct agg att gta aaa ctt gaa act Cys Ile Gly Ser Pro Ile Val Ser Pro Arg Ile Val Lys Leu Glu Thr 95 100 105 110	399
gaa agc aag cgc ttg cat aac aag gaa aat caa cat gtg caa cag aca Glu Ser Lys Arg Leu His Asn Lys Glu Asn Gln His Val Gln Gln Thr 115 120 125	447
ctt aat agt aca aat gaa ata gaa gca cta gag acc agt aga ctt tat Leu Asn Ser Thr Asn Glu Ile Glu Ala Leu Glu Thr Ser Arg Leu Tyr 130 135 140	495
gaa gac agt ggc tat tcc tca ttt tct cta caa agt ggc ctc agt gaa Glu Asp Ser Gly Tyr Ser Ser Phe Ser Leu Gln Ser Gly Leu Ser Glu 145 150 155	543
cat gaa gaa ggt acc ctc ctg gag gag aat ttc ggt gac agt cta caa His Glu Glu Gly Thr Leu Leu Glu Glu Asn Phe Gly Asp Ser Leu Gln 160 165 170	591
tcc tgc ctg cta caa ata caa agc cca gac caa tat ccc aac aaa aac Ser Cys Leu Leu Gln Ile Gln Ser Pro Asp Gln Tyr Pro Asn Lys Asn 175 180 185 190	639
ttg ctg cca gtt ctt cat ttt gaa aaa gtg gtt tgt tca aca tta aaa Leu Leu Pro Val Leu His Phe Glu Lys Val Val Cys Ser Thr Leu Lys 195 200 205	687
aag aat gca aaa cga aat cct aaa gta gat cgg gag atg ctg aag gaa Lys Asn Ala Lys Arg Asn Pro Lys Val Asp Arg Glu Met Leu Lys Glu 210 215 220	735
att ata gcc aga gga aat ttt aga ctg cag aat ata att ggc aga aaa Ile Ile Ala Arg Gly Asn Phe Arg Leu Gln Asn Ile Ile Gly Arg Lys 225 230 235	783
atg ggc cta gaa tgt gta gat att ctc agc gaa ctc ttt cga agg gga Met Gly Leu Glu Cys Val Asp Ile Leu Ser Glu Leu Phe Arg Arg Gly 240 245 250	831
ctc aga cat gtc tta gca act att tta gca caa ctc agt gac atg gac Leu Arg His Val Leu Ala Thr Ile Leu Ala Gln Leu Ser Asp Met Asp 255 260 265 270	879
tta atc aat gtg tct aaa gtg agc aca act tgg aag aag atc cta gaa Leu Ile Asn Val Ser Lys Val Ser Thr Thr Trp Lys Lys Ile Leu Glu 275 280 285	927

gat gat aag ggg gca ttc cag ttg tac agt aaa gca ata caa aga gtt 975  
Asp Asp Lys Gly Ala Phe Gln Leu Tyr Ser Lys Ala Ile Gln Arg Val  
290 295 300

acc gaa aac aac aat aaa ttt tca cct cat gct tca acc aga gaa tat 1023  
Thr Glu Asn Asn Asn Lys Phe Ser Pro His Ala Ser Thr Arg Glu Tyr  
305 310 315

gtt atg ttc aga acc cca ctg gct tct gtt cag aaa tca gca gcc cag 1071  
Val Met Phe Arg Thr Pro Leu Ala Ser Val Gln Lys Ser Ala Ala Gln  
320 325 330

act tct ctc aaa aaa gat gct caa acc aag tta tcc aat caa ggt gat 1119  
Thr Ser Leu Lys Lys Asp Ala Gln Thr Lys Leu Ser Asn Gln Gly Asp  
335 340 345 350

cag aaa ggt tct act tat agt cga cac aat gaa ttc tct gag gtt gcc 1167  
Gln Lys Gly Ser Thr Tyr Ser Arg His Asn Glu Phe Ser Glu Val Ala  
355 360 365

aag aca ttg aaa aag aac gaa agc ctc aaa gcc tgt att cgc tgt aat 1215  
Lys Thr Leu Lys Lys Asn Glu Ser Leu Lys Ala Cys Ile Arg Cys Asn  
370 375 380

tca cct gca aaa tat gat tgc tat tta caa cgg gca acc tgc aaa cga 1263  
Ser Pro Ala Lys Tyr Asp Cys Tyr Leu Gln Arg Ala Thr Cys Lys Arg  
385 390 395

gaa ggc tgt gga ttt gat tat tgt acg aag tgt ctc tgt aat tat cat 1311  
Glu Gly Cys Gly Phe Asp Tyr Cys Thr Lys Cys Leu Cys Asn Tyr His  
400 405 410

act act aaa gac tgt tca gat ggc aag ctc ctc aaa gcc agt tgt aaa 1359  
Thr Thr Lys Asp Cys Ser Asp Gly Lys Leu Lys Ala Ser Cys Lys  
415 420 425 430

ata ggt ccc ctg cct ggt aca aag aaa agc aaa aag aat tta cga aga 1407  
Ile Gly Pro Leu Pro Gly Thr Lys Lys Ser Lys Lys Asn Leu Arg Arg  
435 440 445

ttg tgatctctta ttaaatcaat tgttactgat catgaatgtt agtttagaaaa 1460  
Leu

tgtaggttt taactaaaaaaa aaaaattgtat tggattttc aattttatgt tgaaatcggt 1520  
gtatgtatcctt gaggttttttt tccccccaga agataaaagag gatagacaac ctctttaaaat 1580  
atttttacaa tttaatgaga aaaagttaa aattctcaat acaaatcaaa caatttaaat 1640  
attttaagaa aaaaggaaaaa gtagatagtg atactgaggg taaaaaaaaa ttgattcaat 1700  
tttatggtaa aggaaaccca tgcaattttt ccttagacagt cttaaatatg tctggttttc 1760  
catctgttag catttcagac attttatgtt cctcttactc aattgatacc aacagaaata 1820  
tcaacttctg gagtcttata aatgtgttgtt cacctttcta aagcttttt tcattgtgtg 1880  
tattttcccaa gaaagtatcc ttgtaaaaaa cttgcttggtt ttccttattt ctgaaatctg 1940  
tttaatatttttgtataca tgtaaatattt tctgtatccc ttatatgtca aagaatatgt 2000

ctcttgatg tacatataaa aataaatttt gctcaat

2037

<210> 14  
<211> 447  
<212> PRT  
<213> Homo sapien

<400> 14  
Met Ser Arg Arg Pro Cys Ser Cys Ala Leu Arg Pro Pro Arg Cys Ser  
1 5 10 15  
Cys Ser Ala Ser Pro Ser Ala Val Thr Ala Ala Gly Arg Pro Arg Pro  
20 25 30  
Ser Asp Ser Cys Lys Glu Glu Ser Ser Thr Leu Ser Val Lys Met Lys  
35 40 45  
Cys Asp Phe Asn Cys Asn His Val His Ser Gly Leu Lys Leu Val Lys  
50 55 60  
Pro Asp Asp Ile Gly Arg Leu Val Ser Tyr Thr Pro Ala Tyr Leu Glu  
65 70 75 80  
Gly Ser Cys Lys Asp Cys Ile Lys Asp Tyr Glu Arg Leu Ser Cys Ile  
85 90 95  
Gly Ser Pro Ile Val Ser Pro Arg Ile Val Lys Leu Glu Thr Glu Ser  
100 105 110  
Lys Arg Leu His Asn Lys Glu Asn Gln His Val Gln Gln Thr Leu Asn  
115 120 125  
Ser Thr Asn Glu Ile Glu Ala Leu Glu Thr Ser Arg Leu Tyr Glu Asp  
130 135 140  
Ser Gly Tyr Ser Ser Phe Ser Leu Gln Ser Gly Leu Ser Glu His Glu  
145 150 155 160  
Glu Gly Thr Leu Leu Glu Glu Asn Phe Gly Asp Ser Leu Gln Ser Cys  
165 170 175  
Leu Leu Gln Ile Gln Ser Pro Asp Gln Tyr Pro Asn Lys Asn Leu Leu  
180 185 190  
Pro Val Leu His Phe Glu Lys Val Val Cys Ser Thr Leu Lys Lys Asn  
195 200 205  
Ala Lys Arg Asn Pro Lys Val Asp Arg Glu Met Leu Lys Glu Ile Ile  
210 215 220  
Ala Arg Gly Asn Phe Arg Leu Gln Asn Ile Ile Gly Arg Lys Met Gly  
225 230 235 240  
Leu Glu Cys Val Asp Ile Leu Ser Glu Leu Phe Arg Arg Gly Leu Arg  
245 250 255  
His Val Leu Ala Thr Ile Leu Ala Gln Leu Ser Asp Met Asp Leu Ile  
260 265 270  
Asn Val Ser Lys Val Ser Thr Thr Trp Lys Lys Ile Leu Glu Asp Asp  
275 280 285  
Lys Gly Ala Phe Gln Leu Tyr Ser Lys Ala Ile Gln Arg Val Thr Glu  
290 295 300  
Asn Asn Asn Lys Phe Ser Pro His Ala Ser Thr Arg Glu Tyr Val Met  
305 310 315 320  
Phe Arg Thr Pro Leu Ala Ser Val Gln Lys Ser Ala Ala Gln Thr Ser  
325 330 335  
Leu Lys Lys Asp Ala Gln Thr Lys Leu Ser Asn Gln Gly Asp Gln Lys  
340 345 350  
Gly Ser Thr Tyr Ser Arg His Asn Glu Phe Ser Glu Val Ala Lys Thr

355	360	365
Leu Lys Lys Asn Glu Ser Leu Lys Ala Cys Ile Arg Cys Asn Ser Pro		
370	375	380
Ala Lys Tyr Asp Cys Tyr Leu Gln Arg Ala Thr Cys Lys Arg Glu Gly		
385	390	395
Cys Gly Phe Asp Tyr Cys Thr Lys Cys Leu Cys Asn Tyr His Thr Thr		
405	410	415
Lys Asp Cys Ser Asp Gly Lys Leu Leu Lys Ala Ser Cys Lys Ile Gly		
420	425	430
Pro Leu Pro Gly Thr Lys Lys Ser Lys Lys Asn Leu Arg Arg Leu		
435	440	445

<210> 15  
<211> 20  
<212> PRT  
<213> Homo sapien

<400> 15  
Ser Glu Ser Pro Gly Ala Leu Arg Ser Gly Ser Leu Arg Cys Ile Ser  
1 5 10 15  
Leu Arg Ile Cys  
20

<210> 16  
<211> 20  
<212> PRT  
<213> Homo sapien

<400> 16  
Val Cys Arg Gly Arg Ile Arg Ser Gly Ser Leu Arg Cys Ile Ser Leu  
1 5 10 15  
Arg Ile Cys Arg  
20

<210> 17  
<211> 20  
<212> PRT  
<213> Homo sapien

<400> 17  
Leu Leu Arg Leu Gly Cys Ile Arg Leu Leu Met Leu Arg Arg Gly Val  
1 5 10 15  
Val Phe Arg Leu  
20

<210> 18  
<211> 20  
<212> PRT  
<213> Homo sapien

<400> 18  
Val Leu Phe Leu Ser Leu Arg Phe Trp Gly Leu Asn Ile Val Val Met  
1 5 10 15  
Gly Arg Leu Leu  
20

<210> 19  
<211> 20  
<212> PRT  
<213> Homo sapien

<400> 19  
Cys Arg Ser Leu Gly Val Ile Val Gly Gly Thr Glu Ala Ala Gly Ala  
1 5 10 15  
Pro Thr Phe Ile  
20

<210> 20  
<211> 20  
<212> PRT  
<213> Homo sapien

<400> 20  
Val Leu Phe Leu Ser Leu Arg Phe Trp Gly Leu Asn Ile Val Val Met  
1 5 10 15  
Gly Arg Leu Leu  
20

<210> 21  
<211> 20  
<212> PRT  
<213> Homo sapien

<400> 21  
Trp Leu Arg Arg Gly Leu Val Gly Val Phe Phe Leu Leu Ser Arg Val  
1 5 10 15  
Met Val Gly Ile  
20

<210> 22  
<211> 20  
<212> PRT  
<213> Homo sapien

<400> 22  
Ser Leu Gly Leu Ser Val Cys Ile Gly Arg Arg Ala Gly Gly Phe  
1 5 10 15  
Arg Gly Phe Gly

20

<210> 23  
<211> 20  
<212> PRT  
<213> Homo sapien

<400> 23  
Arg Phe Ala Leu Ser Ile Gly Val Cys Val Val Val Arg Val Gly Ile  
1 5 10 15  
Cys Leu Gly Met  
20

<210> 24  
<211> 20  
<212> PRT  
<213> Homo sapien

<400> 24  
Ser Ala Val Leu Val Leu Val Tyr Val Ser Ala Ala Leu Arg Gly Arg  
1 5 10 15  
Gly Phe Gly Ile  
20

<210> 25  
<211> 20  
<212> PRT  
<213> Homo sapien

<400> 25  
His Gly Gly Gly Arg Gly Ala Leu Val Ser Val Met Tyr Leu Cys Gly  
1 5 10 15  
Phe Ile Arg Leu  
20

<210> 26  
<211> 18  
<212> PRT  
<213> Homo sapien

<400> 26  
Arg Gly Arg Val Ile Gly Met Trp Val Gly Leu Arg Cys Arg Met Phe  
1 5 10 15  
Leu Val

<210> 27  
<211> 15

<212> PRT

<213> Homo sapien

<400> 27

Val Asp Trp Ala Val Tyr Ser Val Val Trp Arg Tyr Thr Thr  
1 5 10 15

<210> 28

<211> 20

<212> PRT

<213> Homo sapien

<400> 28

Lys Thr Ser Val Ile Leu Val Trp Arg Leu Ser Leu Phe Phe Cys Leu  
1 5 10 15

Tyr Arg Ser Leu  
20

<210> 29

<211> 7

<212> PRT

<213> Homo sapien

<400> 29

Ala Asn Arg Cys Trp Arg Glu  
1 5

<210> 30

<211> 13

<212> PRT

<213> Homo sapien

<400> 30

Glu Gly Thr Leu Ser Lys Arg Met Trp Arg Thr His Asn  
1 5 10

<210> 31

<211> 10

<212> PRT

<213> Homo sapien

<400> 31

Ser Trp Arg Asp Met Thr Gln Ser Gly Met  
1 5 10

<210> 32

<211> 11

<212> PRT

<213> Homo sapien

<400> 32

Asp Val Pro Trp Gln Arg Ala Cys Ala Arg Gln  
1 5 10

<210> 33

<211> 9

<212> PRT

<213> Homo sapien

<400> 33

Leu Glu Arg Val Ala Arg Trp Val Leu  
1 5

<210> 34

<211> 12

<212> PRT

<213> Homo sapien

<400> 34

Val Ala Asp Val Leu Val Phe Trp Gly Tyr Val Phe  
1 5 10

<210> 35

<211> 8

<212> PRT

<213> Homo sapien

<400> 35

Gly Asp Val Gly Val Phe Pro Glu  
1 5

<210> 36

<211> 16

<212> PRT

<213> Homo sapien

<220>

<221> VARIANT

<222> (1)...(16)

<223> Xaa = Any Amino Acid

<400> 36

Pro Glu Met Met Leu Glu Gly Pro Lys Tyr Cys Leu Xaa Leu Xaa Glu  
1 5 10 15

<210> 37

<211> 7  
<212> PRT  
<213> Homo sapien

<400> 37  
Leu Leu Tyr Gly Ala Leu Ala  
1 5

<210> 38  
<211> 11  
<212> PRT  
<213> Homo sapien

<400> 38  
Gly Ala Ile Lys Phe Ala His Glu Ser Cys Glu  
1 5 10

<210> 39  
<211> 5  
<212> PRT  
<213> Homo sapien

<400> 39  
Pro Met Ala Met Asp  
1 5

<210> 40  
<211> 5  
<212> PRT  
<213> Homo sapien

<400> 40  
Gln Glu Glu Glu Met  
1 5

<210> 41  
<211> 12  
<212> PRT  
<213> Homo sapien

<400> 41  
Ile Ser Val Val His Gly Ile Gly Ser Asp Ser Asp  
1 5 10

<210> 42  
<211> 28  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Primer

<400> 42  
gggaattcgg acttatggca tgtaaaca 28

<210> 43  
<211> 19  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Primer

<400> 43  
tagccaagtt gcgaatgga 19

<210> 44  
<211> 35  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Primer

<400> 44  
gtgaattcat gcaacttgta cctgatatacg agttc 35

<210> 45  
<211> 23  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Primer

<400> 45  
ggactcgagg ctctacagag gcc 23

<210> 46  
<211> 31  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Primer

<400> 46  
gatcaagctt atggcttcag aagagctaca g 31

<210> 47  
<211> 37

<212> DNA  
<213> Artificial Sequence

<220>  
<223> Primer

<400> 47  
gatcgaattc tccaaattcc gtgtctcctt tggcttg 37

<210> 48  
<211> 36  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Primer

<400> 48  
cctctgaatt ccatatgagc gataaaaattt ttcacc 36

<210> 49  
<211> 34  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Primer

<400> 49  
gatcctcgag tagatggcca gctaggccag gtta 34

<210> 50  
<211> 497  
<212> PRT  
<213> Homo sapiens

<400> 50  
Met Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Ser Arg Gly Ser Asn  
1 5 10 15  
Asn Phe Gly Asn Glu Glu Phe Asp Cys His Phe Leu Asp Glu Gly Phe  
20 25 30  
Thr Ala Lys Asp Ile Leu Asp Gln Lys Ile Asn Glu Val Ser Ser Ser  
35 40 45  
Asp Asp Lys Asp Ala Phe Tyr Val Ala Asp Leu Gly Asp Ile Leu Lys  
50 55 60  
Lys His Leu Arg Trp Leu Lys Ala Leu Pro Arg Val Thr Pro Phe Tyr  
65 70 75 80  
Ala Val Lys Cys Asn Asp Ser Lys Ala Ile Val Lys Thr Leu Ala Ala  
85 90 95  
Thr Gly Thr Gly Phe Asp Cys Ala Ser Lys Thr Glu Ile Gln Leu Val  
100 105 110  
Gln Ser Leu Gly Val Pro Pro Glu Arg Ile Ile Tyr Ala Asn Pro Cys  
115 120 125

Lys Gln Val Ser Gln Ile Lys Tyr Ala Ala Asn Asn Gly Val Gln Met  
130 135 140  
Met Thr Phe Asp Ser Glu Val Glu Leu Met Lys Val Ala Arg Ala His  
145 150 155 160  
Pro Lys Ala Lys Leu Val Leu Arg Ile Ala Thr Asp Asp Ser Lys Ala  
165 170 175  
Val Cys Arg Leu Ser Val Lys Phe Gly Ala Thr Leu Arg Thr Ser Arg  
180 185 190  
Leu Leu Leu Glu Arg Ala Lys Glu Leu Asn Ile Asp Val Val Gly Val  
195 200 205  
Ser Phe His Val Gly Ser Gly Cys Thr Asp Pro Glu Thr Phe Val Gln  
210 215 220  
Ala Ile Ser Asp Ala Arg Cys Val Phe Asp Met Gly Ala Glu Val Gly  
225 230 235 240  
Phe Ser Met Tyr Leu Leu Asp Ile Gly Gly Phe Pro Gly Ser Glu  
245 250 255  
Asp Val Lys Leu Phe Glu Glu Ile Thr Gly Val Ile Asn Pro Ala  
260 265 270  
Leu Asp Lys Tyr Phe Pro Ser Asp Ser Gly Val Arg Ile Ile Ala Glu  
275 280 285  
Pro Gly Arg Tyr Tyr Val Ala Ser Ala Phe Thr Leu Ala Val Asn Ile  
290 295 300  
Ile Ala Lys Lys Ile Val Leu Lys Glu Gln Thr Gly Ser Asp Asp Glu  
305 310 315 320  
Asp Glu Ser Ser Glu Gln Thr Phe Met Tyr Tyr Val Asn Asp Gly Val  
325 330 335  
Tyr Gly Ser Phe Asn Cys Ile Leu Tyr Asp His Ala His Val Lys Pro  
340 345 350  
Leu Leu Gln Lys Arg Pro Lys Pro Asp Glu Lys Tyr Tyr Ser Ser Ser  
355 360 365  
Ile Trp Gly Pro Thr Cys Asp Gly Leu Asp Arg Ile Val Glu Arg Cys  
370 375 380  
Asp Leu Pro Glu Met His Val Gly Asp Trp Met Leu Phe Glu Asn Met  
385 390 395 400  
Gly Ala Tyr Thr Val Ala Ala Ala Ser Thr Phe Asn Gly Phe Gln Arg  
405 410 415  
Pro Thr Ile Tyr Tyr Val Met Ser Gly Pro Ala Trp Glu Leu Met Gln  
420 425 430  
Gln Phe Gln Asn Pro Asp Phe Pro Pro Glu Val Glu Glu Gln Asp Ala  
435 440 445  
Ser Thr Leu Pro Val Ser Cys Ala Trp Glu Ser Gly Met Lys Arg His  
450 455 460  
Arg Ala Ala Cys Ala Ser Ala Ser Ile Asn Val Glu Phe Ala Gly Gly  
465 470 475 480  
Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly Gly Gly  
485 490 495  
Ser